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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,349	01/30/2002	Joel Wacknov	153501-0403	5210

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IRELL & MANELLA LLP
840 NEWPORT CENTER DRIVE
SUITE 400
NEWPORT BEACH, CA 92660

EXAMINER	
CUEVAS, PEDRO J	
ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/066,349	WACKNOV ET AL.	
	Examiner	Art Unit	
	Pedro J. Cuevas	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Power Generation System Having Power Controller And A Capacitor To Stabilize Output Line DC Voltage.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-10, 12, 15-21, 23, 26-32, 34, 36-38, and 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,031,294 to Geis et al. in view of U.S. Patent No. 6,281,601 to Edelman et al.

Geis et al. disclose the construction of a turbogenerator/motor controller with ancillary energy storage/discharge comprising:

a fuel source to provide fuel;

a turbogenerator (Figure 1), coupled to the fuel source, to generate AC power, including:

a shaft (36);

a generator (12), coupled to the shaft, to generate the AC power;

a compressor (30), coupled to the shaft, to provide a supply of compressed air;

a combustor (14) coupled to receive the supply of compressed air and the fuel, said combustor to combust the fuel and to provide exhaust gas;

a turbine (31) coupled the shaft and coupled to receive the exhaust gas, said exhaust gas to flow through the turbine to control a rotational speed of the shaft; and

a recuperator (15) including a high pressure side coupled between the compressor and the combustor, and a low pressure side coupled to receive the exhaust gas from the turbine; and

a power controller (40), coupled to the turbogenerator; and

a battery (70) controllably coupled across the output lines, under control of the power controller, to charge the capacitor.

However, it fails to disclose:

a power controller including an AC/DC power converter, said AC/DC power converter to convert said AC power generated by the turbogenerator to DC power on output lines to supply a DC load, said power controller to regulate the fuel to the turbogenerator, independent of a DC voltage on the output lines; and

a capacitor coupled across the output lines, said capacitor to source power to and/or sink power from the output lines, due to load changes by the DC load, to stabilize a DC voltage on the output lines.

Edelman et al. teach the construction of a turbogenerator power control system and method having:

a power controller (101) including an AC/DC power converter (44), said AC/DC power converter to convert said AC power generated by the turbogenerator to DC power on output lines (54) to supply a DC load, said power controller to regulate the fuel to the turbogenerator, independent of a DC voltage on the output lines for the purpose of preventing constant acceleration and deceleration of the engine to meet the changing load demand; and

a capacitor (column 4, lines 44-53) coupled across the output lines and located internal to the power controller, said capacitor to source power to and/or sink power from the output lines, due to load changes by the DC load, to stabilize a DC voltage on the output lines.

It would have been obvious to one skilled in the art at the time the invention was made to use the power converters and capacitor used in the turbogenerator power control system and method disclosed by Edelman et al. on the turbogenerator/motor controller with ancillary energy storage/discharge disclosed by Geis et al. for the purpose of preventing constant acceleration and deceleration of the engine to meet the changing load demand.

5. With regards to claim 5-8, 16-19, 27-30, and 36-37, Geis et al. in view of Edelman et al. disclose a system wherein:

when an increase in the load is detected, the power controller increases the fuel to the turbogenerator to increase the DC power on the output lines;

when the DC power on the output lines is sufficient to match the increase in the load and recharge the capacitor, said power controller to reduce the fuel to the turbogenerator to match the load required by the DC load;

when a decrease in the load is detected, the power controller decreases the fuel to the turbogenerator to decrease the DC power on the output lines to match the load required by the DC load;

the turbogenerator includes a motor/generator and said AC/DC power converter comprises a bi-directional AC/DC power converter (column 4, lines 20-24), said power controller, in a startup mode, to configure the bi-directional AC/DC power converter in a reverse direction to convert DC power of the capacitor to AC power to power the motor/generator.

It should be emphasized that "apparatus claims must be structurally distinguishable from the prior art." MPEP 2114. In re Danly, 263 F. 2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) it was held that apparatus claims must be distinguished from prior art in terms of structure rather than function. In Hewlett-Packard Co v Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990), the court held that: "Apparatus claims cover what a device is, not what it does." (emphases in original). To emphasize the point further, the court added: "An invention need not operate differently than the prior art to be patentable, but need only be different" (emphases in original).

6. Claims 2-3, 13-14, 24-25, 35, 39, and 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,031,294 to Geis et al. in view of U.S. Patent No. 6,281,601 to Edelman et al. as applied to claims 1, 4-10, 12, 15-21, 23, 26-32, 34, 36-38, and 40-42 above, and further in view of U.S. Patent No. 5,963,417 to Anderson et al.

Geis et al. in view of Edelman et al. disclose the construction of an turbogenerator/motor control system and method as described above.

However, it fails to disclose the use of an electrochemical or hybrid capacitor.

Anderson et al. teach the construction of electrochemical capacitors for the purpose of providing control over the properties of the resultant metal oxide materials in the construction of electrochemical capacitors.

It would have been obvious to one skilled in the art at the time the invention was made to use the electrochemical capacitors disclosed by Anderson et al. on the turbogenerator/motor control system and method disclosed by Geis et al. in view of Edelman et al. for the purpose of providing control over the properties of the resultant metal oxide materials in the construction of electrochemical capacitors.

7. With regards to claims 3, 14, and 25, it would have been obvious to one having ordinary skill in the art at the time the invention was made to limit the voltage range of the capacitor to a predetermined voltage range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

8. Claims 11, 22, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,031,294 to Geis et al. in view of U.S. Patent No. 6,281,601 to Edelman et al. as

applied to claims 1, 4-10, 12, 15-21, 23, 26-32, 34, 36-38, and 40-42 above, and further in view of U.S. Patent No. 4,455,820 to Buckley, Jr. et al.

Geis et al. in view of Edelman et al. disclose the construction of a turbogenerator/motor control system and method as described above.

However, it fails to disclose a temperature sensor coupled to the power controller and the turbine to sense a temperature.

Buckley, Jr. et al. teach the construction of control system and method for controlling a gas turbine in accordance with the temperature conditions having a temperature sensor for the purpose of sensing the temperature of the system.

It would have been obvious to one skilled in the art at the time the invention was made to use the temperature sensor disclosed by Buckley, Jr. et al. on the turbogenerator/motor control system and method disclosed by Geis et al. in view of Edelman et al. for the purpose of sensing the temperature of the system.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for

the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas
July 22, 2003

Nicholas Ponomarenko
Primary Examiner
Technology Center 2800